

CITY OF LINCOLN, NEBRASKA, STANDARD SPECIFICATIONS

Chapter 14

TRAFFIC SIGNS

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CHAPTER 14

TRAFFIC SIGNS

14.00 GENERAL

This work shall consist of all materials and labor necessary to provide, fabricate, and install traffic signs at the locations shown in the plans.

Traffic signs shall conform to the requirements of the current edition of the Manual on Uniform Traffic Control Devices for Street and Highways (MUTCD), Standard Highway Signs, and the Lincoln Standard Plans (LSP).

It shall be the Contractor's responsibility to utilize the "One-Call" system when required.

14.01 SIGNS

A. GENERAL

These signs are regulatory, warning, guide, object markers, and information signs composed of a flat aluminum blank surfaced with reflective sheeting. The message shall be either directly applied or screened on the sign face, in the colors, size, and layout specified in the plans and Standard Highway Signs.

Reflective background sheeting for all signs shall meet the requirements of ASTM D4956. The following types shall be used when specified: Type I for Engineering Grade, Type III for High Intensity, Type IX for VIP Grade. Refer to the LSP for required sheeting type. Adhesive shall conform to Class 1.

B. FABRICATION

All blanks shall be new aluminum meeting ASTM Specifications B209, Alloy 5052-H38 of the sizes as shown in the Standard Highway Signs and the MUTCD. The gauges shall be as follows. Signs less than 4 square feet shall be 0.063 inches thick, 4 square feet to less than 9 square feet shall be 0.08 inches thick, and 9 square feet or greater shall be 0.10 inches thick.

Signs 18 inches tall or more (Metro Street Name signs) shall be 0.125 inches thick.

All signs shall be smooth and free of burrs. Both sides of the blank shall be treated with an Alodine 1200 process or approved equivalent.

The Contractor shall apply the reflective sheeting without visible seams or joints. Reflective sheeting shall be mechanically applied as per manufacturer's recommended procedures and equipment.

14.01 SIGNS (Continued)

The message, legend, and border of signs shall be applied by either screening or electronic cuttable (EC) film.

C. INSTALLATION AND REMOVAL

The bottom height of all signs shall generally be 7 feet above the ground or surface, unless otherwise specified in the MUTCD. If using a utility pole, the Contractor shall get approval from the appropriate pole owner to install a traffic control sign.

All signs on the roadway shall be mounted so that any edge of the sign which is adjacent to a roadway shall be a minimum of 2 feet from the face of curb. This distance shall be as close as possible to 2 feet from the face of curb.

The back of each sign shall have the month and year (MM/YY) that the sign was installed, in 1 inch black letters.

All signs that are installed shall have a fabrication date of no more than 6 months prior to the installation date and will not have been used previous to this installation.

The removal of the existing signs shall be coordinated with the Engineer to assure required signs are in place during all construction phases. These traffic signs, fastening hardware, and posts shall be returned to 901 North 6th Street. All material damaged during removal, relocation, storage or reinstallation shall be repaired or replaced by the Contractor at their expense. The Contractor is responsible to prove if any material was damaged prior to removal.

D. INSPECTION AND WARRANTY

Each sign installation will be reviewed by the engineer. If a sign does not meet the standards shown in this document, MUTCD, or the LSP, it shall be replaced or relocated at the Contractor's expense.

All Street Name sign layouts shall be reviewed and approved by City staff prior to fabrication.

Following initial completion of all traffic sign installations, there will be a 1 year observation period during which the Contractor, at no expense to the City of Lincoln, shall replace or reinstall any traffic sign that the Engineer determines is not installed properly or does not follow this specification.

E. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Signs shall be paid for at the contract unit price bid based on size. The three sign categories are small (signs less than 4 square feet), medium (4 square feet to less than 9 square feet), and large (9 square feet or larger). These bid amounts shall be full compensation for installing a new sign, connecting and mounting hardware, and for all labor, equipment, tools, materials, and incidentals necessary to complete the work in accordance with the plans and these Specifications. Signs that are constructed from the fluorescent yellow green (FYG) material shall be paid for at a separate contract unit bid price per sign. .

14.01 SIGNS (Continued)

Removal of signs shall be paid for at the contract unit price bid based on unit price for each assembly. Multiple signs on a single post shall be considered one assembly. This bid amount shall be full compensation for removing existing signing, post, connecting and mounting hardware, and for all labor, equipment, tools, materials, and incidentals necessary to complete the work in accordance with the plans and these Specifications.

Relocated signs during construction shall be subsidiary to the project. Any temporary signs needed throughout the project shall be the responsibility of the Contractor. All signs shall be reinstalled in the same location where they existed prior to removal unless plans show otherwise.

14.02 MOUNTING AND HARDWARE

A. “U” CHANNEL SIGN POSTS

The Contractor shall use 5/16 inch Grade 5 cadmium plated bolts of appropriate length and nuts with a 5/16 inch cadmium plated washer. A nylon washer between the steel washer and sign face shall be used.

B. STREET NAME SIGN POSTS

The Contractor shall refer to the LSP to install the Street Name assembly. All hardware shall be Lyle E450 or approved equivalent.

When installing two 6 inch signs, the North/South Street shall be installed on top. When installing three 6 inches signs, the signs shall alternate, with each sign being perpendicular to the next. When installing one 9 inch and one 6 inch sign, the 9 inch sign shall be on top. If there is NO “Stop” or “Yield” sign below the assembly, the top sign shall be the North/South street. If there is a “Stop” or “Yield” sign below the assembly, the bottom sign should align with the “Stop” or “Yield” sign.

If there is an additional sign below the Street name signs, the Contractor shall use a Pelco U-bolt Sign Clamp, SH-0206 or approved equivalent. A nylon washer shall be against the sign face to attach the sign.

C. WOOD POLES

The Contractor shall use 2 inch by 5/16 inch cadmium lag bolts and cadmium plated washer. A nylon washer shall be between the lag bolt and the sign face. A Street Name bracket, as shown in the LSP, shall use a 5 inch by 3/8 inch cadmium plated lag bolt. The Contractor shall drive the lag bolts in half way with a hammer and then screw in until tight.

D. OTHER POLES

The Contractor shall use stainless steel Band-It banding, 3/4 inch by 0.03 inch, Part No. C206, or approved equivalent. Stainless steel Band-It Buckles, Part No. C256, or approved equivalent shall also be used. The sign shall be secured to the banding with stainless steel Band-It Flared Leg Brack-It, Part No. D021, and its supplied stainless steel bolt or approved equivalent. Only stainless steel material shall be allowed.

14.02 MOUNTING AND HARDWARE (Continued)

E. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

All mounting materials used are subsidiary to installing the sign and shall not be paid for separately.

14.03 “U” CHANNEL SIGN POSTS

A. GENERAL

The post shall be “U” in shape and be the appropriate length and weight. If the post is 8 foot long it shall weigh 1.5 pounds per foot; if 9 foot long, it shall weigh 2.5 pounds per foot. If the post is 11 foot long, it shall weigh 2 pounds per foot; if 12 foot or longer, it shall weigh 3 pounds per foot.

B. MATERIAL

Posts shall be fabricated from hot-rolled steel conforming to the requirements specified in ASTM A 499 for Grade 60 steel, and conform to the chemical requirements specified in ASTM A 1 from rails having nominal weights of 90 pounds per yard and heavier when manufactured.

The ground sleeve shall be Foresight 19-VR18 or approved equivalent.

C. FABRICATION

The posts shall have holes from end to end. All holes shall be $\frac{3}{8}$ inch diameter which shall be punched, with a spacing of one inch from center to center, $\pm 1/16$ inch, beginning with the first hole at one inch from the top of the post.

The punching shall be done so that there will be no cracks radiating from the holes.

All posts shall be cleaned of all loose scale prior to finishing and painted with one or more coats of green alkyd resin, gloss enamel baked on or approved equivalent. This finish shall produce a glossy appearance with satisfactory elastic and adhering properties of not be less than 1.5 mils in thickness.

After drying, the finish shall not crack or chip from the metal when struck a light blow with a hammer. It shall show no appreciable change in adhesion or appearance when immersed in water at room temperature for a period of 72 hours.

D. INSTALLATION

The 9 foot posts that are installed in concrete medians shall be mounted on breakaway ground sleeves made of steel.

The Contractor shall be responsible for installing the ground sleeve described in the LSP 78 prior to installation of the concrete. No coring shall be allowed to install the ground sleeve. In the event the ground sleeve is not installed, the concrete shall be removed to the nearest joint and reinstalled with the ground sleeve in place.

The 11 foot posts shall be installed 2 feet 6 inches into the ground. The 12 foot posts shall be installed 3 feet into the ground.

14.03 “U” CHANNEL SIGN POSTS (Continued)

The Contractor shall use U-channel posts except for street name signs. All signs shall be mounted such that there is no extra post above the sign.

E. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Payment for installation of the posts shall be made for the measured quantity at the contract bid price per linear foot. These bid amounts shall be full compensation for connecting and mounting hardware, and for all labor, equipment, tools, materials, and incidentals necessary to complete the work in accordance with the plans and these Specifications.

Payment for installation of the ground sleeve shall be made for the measured quantity at the contract bid price. The bid amounts shall be full compensation for the ground sleeve and for all labor, equipment, tools, materials, and incidentals necessary to complete the work in accordance with the plans and these Specifications.

14.04 STREET NAME SIGN POSTS

A. GENERAL

This specification describes the minimum acceptable requirements for round sign posts with anti-rotation wing, as per the LSP, used for the installation of street name signs. Posts shall be the appropriate length with one piece wing welded to the round pipe.

B. MATERIAL

The posts shall be fabricated from new, round, ASTM tested, 2-inch I.P.S. black pipe. The post wings shall be 1/4-inch thick high strength metal.

The Street name brackets can be seen in the LSP.

C. FABRICATION

The round post shall have a wing welded at a distance of 26 inches to bottom of wing from one end of the post.

The wing shall be formed from a 12-inch by 4-inch by 1/4 - inch thick piece of flat metal, bent to the radius of the pipe at the center of the 12-inch length, to provide two wings at 90 degrees from each other, and extend approximately 5 inches from the centerline of the pipe. The wing shall be welded to the pipe with a high strength, full length, continuous fillet weld, along all exposed contact points between the pipe and wings.

All ends, edges, and welds of the pipe and wings shall be smooth and free of sharp edges or burrs which could injure the hands of a person handling the post.

The posts shall be powder painted gloss black with a high quality enamel paint.

14.04 STREET NAME SIGN POSTS (Continued)

D. INSTALLATION

The Contractor shall use round posts when installing street name signs, which shall be installed 2 feet, 6 inches into the ground.

The posts shall be 10 foot long if there is no “Stop” sign to be installed. If there is a “Stop” sign to be installed, the post shall be 12 foot long. The post shall be 13 foot long if there is a “Stop” sign and two “One-Way” (back to back) signs installed.

E. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Payment for installation of the posts shall be made for the measured quantity at the contract bid price per linear foot. These bid amounts shall be full compensation for the anti-rotation wing, all labor, equipment, tools, materials, and incidentals necessary to complete the work in accordance with the plans and these Specifications.